MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2015/2016

TMP2021 – MULTIMEDIA PROGRAMMING

(All sections / Groups)

4 MARCH 2016
9.00 a.m – 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 3 pages with 5 Questions only.
2. Attempt **ALL FIVE** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please print all your answers in the Answer Booklet provided.

ANSWER ALL QUESTIONS

QUESTION 1 [10 marks]

Figure 1 below presents a snapshot of the timeline window of a multimedia authoring software for an animation of a ball.

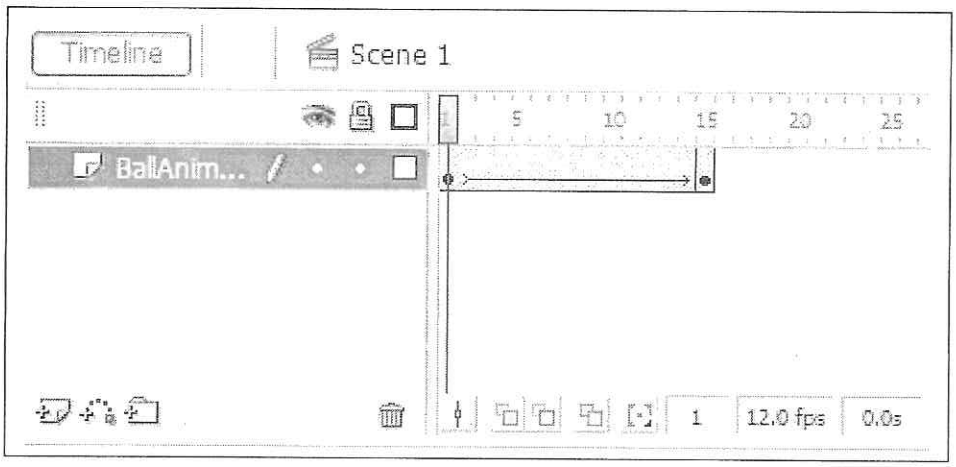

Figure 1: Timeline Window

A. Define the term "multimedia authoring". [1 marks]

B. Based on the timeline in Figure 1:

I. Identify the type of animation technique used. [1 mark]

II. Identify the frame rate. [1 mark]

III. Calculate the duration of this animation, if the last frame is frame 15. [1 mark]

IV. Identify the keyframes and the in-between frames (give the frame number(s)). [2 marks]

C. This animation can be exported for web playback or stand-alone executable. Explain the differences between these two export formats. [4 marks]

QUESTION 2 [10 marks]

A. When working with digital images, explain why it is not recommended to save your image as a .JPEG file when you want to compress the image you are still editing? [2 marks]

Continued ...

B. In Figure 2 below, (a) is an original image and (b) is the modified version of this image.

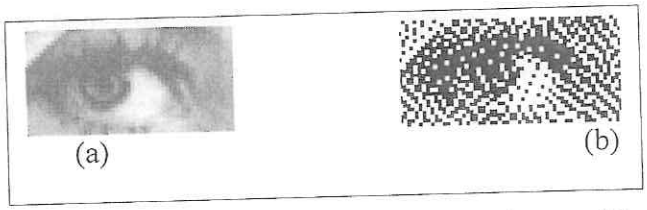

Figure 2: Original image (a) and modified image (b)

I. The original image in Figure 2(a) is an 8-bit grayscale image with the size of 1.56 KB. Calculate the size of the modified image in Figure 2(b) (in bytes) if the new image is a binary image. [2 marks]

II. As a general rule, how does the file size change if the bit depth of an image is decreased from 8-bit to 1-bit? [1 mark]

III. Give two other ways to reduce the file size of an image. [2 marks]

IV. Identify the correct term used to describe the speckled appearance of the outcome in Figure 2(b) and explain how it works. [3 marks]

QUESTION 3 [10 marks]

A. An audio file recorded following the CD quality standard has the size of 5292 KB.

I. What is the duration of this audio? [2 marks]

II. If the audio is changed to mono mode, calculate the new file size. [1 mark]

B. Explain why midi audio is said to be device dependent? [2 marks]

C. Identify the luminance and the chrominance components of the PAL broadcast standard. [1 mark]

D. A display device has the designation of '1080i'.

I. Explain the meaning of the notation '1080i'. [1 mark]

II. Describe the scanning method associated with this device. [3 marks]

QUESTION 4 [10 marks]

A. Temporal compression is a type of compression that can be used to compress video files.

I. What kind of data redundancy is removed to achieve compression? [1 mark]

II. What data is stored for the frames in between the keyframes? [1 mark]

Continued ...

B. MPEG compression use motion compensation to compress video. List the three steps of video compression based on motion compensation. [3 marks]
C. Differentiate between symmetrical and asymmetrical codecs. Why asymmetrical codec is preferable compared to symmetrical codec? [3 marks]
D. Identify two ways to add media references in an HTML document. [2 marks]

QUESTION 5 [10 marks]

The following questions will be based on the ActionScript program below.

```
car_mc.addEventListener(MouseEvent.CLICK, clickCarHandler);
function clickCarHandler(evt:MouseEvent):void
{
        trace("You have clicked on the car");
}
```

A. Identify the event target, the type of event and the action in response to the event in the program. [3 marks]
B. Modify the program so that the event target moves 10 pixels to the left and 15 pixels up in response to the event. [2 marks]
C. Modify the program to respond to any key being pressed on the keyboard instead of mouse clicks. [3 marks]
D. What are the two main types of script errors you can encounter when working with scripts. [2 marks]

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